Fairfax County Stormwater Advisory Committee
Stormwater Needs Assessment Project
Background on County Water Resource Mandates

Fairfax County's stormwater management program is increasingly driven by State and federal regulations, mandates, and initiatives. While it is not possible to present a comprehensive list of all State and federal issues that will affect Fairfax in the next few years, the following touches on a few key emerging issues that are likely to require attention in the County's stormwater program. Mandates and initiatives of particular concern include Virginia Pollutant Discharge Elimination System (VPDES) Municipal Separate Storm Sewer System (MS4) permitting requirements, Total Maximum Daily Load (TMDL) regulatory requirements, implementation of recent changes to the County's Chesapeake Bay Preservation Ordinance, changes in the State's enforcement of the Erosion and Sediment Control Regulations, Virginia's Potomac Tributary Strategy process, Clean Water Act wetlands permitting, the Virginia Dam Safety Act, and the GASB 34 infrastructure valuation protocols.

Virginia Pollutant Discharge Elimination System (VPDES) Permit

Under the State Water Control Law, Fairfax County was required to obtain a Virginia Pollutant Discharge Elimination System (VPDES) permit from the Virginia Department of Environmental Quality (DEQ) to discharge stormwater through its municipal separate storm sewer system (MS4). The County's current permit was issued on January 24, 2002 and remains in effect until January 24, 2007, at which time the County will be required to re-apply for permit coverage. Fairfax County submits an annual progress report to DEQ to demonstrate compliance.

The permit requires the County to develop and implement a Storm Water Management Program that addresses the following watershed management priorities:

- Structural and Source Controls – including inspection and maintenance of stormwater management facilities and BMPs;
- Areas of New Development and Significant Redevelopment;
- Roadways – includes non-VDOT roadways in Fairfax County;
- Retrofitting;
- Pesticide, Herbicide, and Fertilizer Application;
- Illicit Discharge and Improper Disposal – includes a program to effectively prohibit the introduction of non-stormwater elements into the County's MS4;
- Spill Prevention and Response;
- Industrial and High Risk Runoff;
- Construction Site Runoff;
- Storm Sewer Infrastructure Management;
- Public Education; and
- Monitoring Programs – including a dry weather screening program, a wet weather screening program, and an industrial and high-risk runoff monitoring program.

The County has begun its implementation of these permit priorities with the completion of the Stream Protection Strategy (SPS) and the initiation of the County's watershed management planning process.

It is likely that Fairfax County's VPDES permit will become the vehicle for the State to implement a variety of other initiatives and mandates that have stormwater components, including the TMDL (Total Maximum Daily Load) and Tributary Strategies programs, discussed below. Currently, TMDLs and Tributary Strategies are Virginia responsibilities. However, both programs will require implementation measures that are under local government control. As a result, it is likely that the State will incorporate these programs into future iterations of the County's VPDES permit, and stormwater pollutant effluent limits are a possibility for compliance with TMDL measures.

Chesapeake Bay Preservation Act/Regulations

The County adopted an amended Chesapeake Bay Preservation Ordinance (CBPO) in July 2003 (effective November 2003) in response to changes in the Virginia Chesapeake Bay Preservation Area Designation and Management Regulations. The County made several changes that affect stormwater management. Major impacts include the following:

- The County expanded the scope of its Resource Protection Areas (RPAs), in conjunction with mandated state changes, to include all water bodies with perennial flow, which resulted in a significant increase in the number of waterways to which the RPA designation applied. RPAs are the corridors of environmentally sensitive lands that lie alongside or near the shoreline of streams, rivers, and other waterways. To determine the extent of water bodies with perennial flow in the County, the Stormwater Planning Division engaged in a two-year stream-mapping project that led to the County's revised Chesapeake Bay Preservation Area map (see http://www.fairfaxcounty.gov/gisapps/pdfviewer).
- The amended Chesapeake Bay Preservation Ordinance (CBPO) also required amendments to the County's Subdivision Ordinance (Chapter 101); Erosion and Sediment Control Ordinance (Chapter 104); and Zoning Ordinance (Chapter 112). The changes cover a variety of topics including changes to the performance criteria for development and redevelopment in RPAs and Resource Management Areas (RMAs); changes in the information to be provided with plans of development and applications for construction permits; and changes to the procedures and criteria for granting of exceptions to the requirements of the Chesapeake Bay Preservation Ordinance.

Total Maximum Daily Loads

The Total Maximum Daily Load (TMDL) requirements of the federal Clean Water Act represent a significant regulatory challenge for the County. A TMDL must be developed for any stream identified as violating State water quality standards. TMDL stands for Total Maximum Daily Load, and represents the maximum amount of a pollutant that can enter the stream without violating water quality standards. After the TMDL is set, the affected localities must develop a plan for how pollution will be reduced to the necessary levels. The following stream segments in Fairfax County are listed in Part 1A of the Virginia Department of Environmental Quality 2002 303(d) Impaired Waters TMDL Priority List:

Stream Name	Impairment Cause	TMDL Due
Sugarland Run	Fecal Coliform	2014
Difficult Run	General Standard (Benthic)	2010
Pimmit Run	Fecal Coliform	2014
Tidal Potomac River (Wilson Bridge to Brent Point)	Fish Tissue – PCBs	2014
Hunting Creek/Cameron Run	Ammonia; Fish Tissue – PCBs; Fecal Coliform	2010
Backlick Run	Fecal Coliform	2010
Little Hunting Creek	Fish Tissue – PCBs	2014
Pohick Bay	Ammonia; Fish Tissue – PCBs	2014
Accotink Creek*	Fecal Coliform; General Standard (Benthic)	2002-2014
Pohick Creek	Fecal Coliform; Fish Tissue – PCBs; PAH	2014
Bull Run	General Standard (Benthic)	2010
Popes Head Creek	General Standard (Benthic)	2010
Occoquan Bay	pH; Fish Tissue – PCBs	2010
Mills Branch	Fecal Coliform	2014

* The TMDL plan for a 4.8 mile stretch of Accotink Creek for a fecal coliform impairment has been developed. The remaining impairments on Accotink Creek do not yet have a TMDL plan developed.

In addition to these listed water bodies, Fairfax County, in conjunction with the cities of Alexandria and Falls Church, Arlington County, and the Northern Virginia Regional Commission, have also developed a TMDL plan for the Four Mile Run watershed.

The challenge associated with many of Fairfax County's potential TMDLs, based on the list of impaired waters, is that the reductions required are likely going to be unachievable because of the large component of pollutant loadings from natural (and therefore largely uncontrollable) sources. For instance, the Four Mile Run TMDL estimates that wildlife sources (including waterfowl and raccoons), which comprise approximately 70% of the fecal coliform bacteria sources, need to be reduced by 95% in order to meet water quality standards. While the U.S. EPA recognizes the limitations of reducing wildlife sources, local governments will be required to demonstrate that they have reduced controllable sources to the maximum extent feasible, based on the TMDL standards issued in each. If by reducing controllable sources Virginia's water quality standards are not met, Virginia will need to conduct a Use Attainability Analysis to revise water quality standards for the impaired stream segment and/or change the designated use for the water body. Such a process has a high burden of proof under the Clean Water Act.

A concern for the future is that Virginia is in the process of adopting water quality standards for nutrients. Up to now, Virginia has not had such a standard, although the primary source of pollution to the Potomac River and the Chesapeake Bay are

phosphorus and nitrogen – both nutrients. While the ultimate impact of the adoption of new water quality standards is not presently clear, it could mean that Fairfax's streams will be subject to additional regulatory requirements. These requirements may lead to specific stormwater pollutant effluent limits under the County's VPDES permit, as discussed in the previous section.

Erosion and Sediment Control Law/Regulations

In accordance with state law, Fairfax County administers a local erosion and sediment control program governing land disturbances throughout the County. The erosion and sediment control law and regulations are designed to mitigate the impact of land disturbances and clearing on receiving streams and other waterways. The Virginia Department of Conservation and Recreation administers the state erosion and sediment control law and regulations, with the vast majority of Virginia's local governments administering a local E&S program that must be consistent with the state law. DCR's local program review process has been updated recently and has become considerably more rigorous. In addition, DCR revamped the process to ensure that local programs are brought into compliance much faster than before. Programs found inconsistent with the State regulations must enter into a Corrective Action Agreement (CAA) with DCR that outlines a plan for addressing identified deficiencies. Once a CAA is signed, the locality is deemed "provisionally consistent." After the CAA is completely implemented, then a locality is considered consistent. As of August 2003, the Virginia Department of Conservation and Recreation (DCR) rated Fairfax County's program as "provisionally consistent."

Chesapeake Bay Program/Virginia Tributary Strategies

The multi-jurisdictional 2000 Chesapeake Bay Agreement commits Virginia to remove the Chesapeake Bay from the U.S. EPA's list of impaired waters by the year 2010. The draft Shenandoah and Potomac Basins Tributary Strategy, release in April 2004 to implement the nutrient and sediment reduction goals of the 2000 Chesapeake Bay Agreement, relies heavily on urban BMPs. In the Potomac basin alone, the draft Tributary Strategy includes 187,000 acres of urban nutrient management and 71,000 acres of urban retrofit with bioretention facilities, swales, and other innovative BMP practices. These urban BMPs are expected to cost $240 million through 2010, for the region. While the Tributary Strategies program is technically voluntary, failure to meet target reductions has the potential to result in a Chesapeake Bay-wide TMDL. If the Federal government takes such action, it would effectively supplant the voluntary Chesapeake Bay Program and make implementation mandatory, likely through the County's VPDES permit. DCR will be releasing a revised Tributary Strategy Plan in the next few months, which will include revised cost estimates for impacts. DCR has indicated that cost estimates are likely to increase. DCR has also indicated that it will provide additional specificity to the costs, including a breakdown of actions by locality.

Wetlands Permitting

In addition to the items listed above, Fairfax County is also required to comply with regulations regarding impacts to Waters of the U.S. and Waters of the Commonwealth (which differ in geographic extent due to recent Supreme Court decisions and state law changes in 2001), both tidal (the Potomac is tidal up to Little Falls) and non-tidal (such as streams, wetlands and most ponds).

Most activities in the non-tidal waters are regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act, and the Virginia

Department of Environmental Quality (DEQ) under Section 401 and the Virginia Water Protection Program, as well as by the Virginia Marine Resources Commission (VMRC) if impacts involve a non-tidal stream with a drainage are greater then 5 sq. miles (VMRC regulates all tidal waters under separate State law). They notify and often consult with other related agencies (such as EPA, USFWS, VDHR and VDCR) during the permit review process to deal with water quality, endangered species, and cultural resource issues related to these permits. The most common activities Fairfax County typically obtains permits for in these areas are road crossings, utility lines, stormwater facilities (including maintenance), trail construction, stream restoration, and grading for park and school construction. The County also requires (under Chapter 118) any one developing land under a County permit issued by LDS to certify in writing on the plan that they will receive such approvals prior to any disturbance of such regulated areas.

Activities in tidal wetlands (non vegetated or vegetated) are regulated by the same agencies described above, as well as by the Fairfax County Wetlands Board which is supported with staff from the The Fairfax County Department of Planning and Zoning. The types of activities often permitted by this board include the construction of bulkheads, piers, rip-rap revetments on eroded shores, bank stabilization, or dredging in areas above MLW (dredging in deeper waters is still regulated by the other agencies described above - but not by the Fairfax Wetlands Board since such areas are not wetlands).

Dam Safety

As the owner of several state regulated dams, the County is also subject to the terms of the Virginia Dam Safety Act. The Virginia Dam Safety Act covers all dams in the Commonwealth that are not specifically excluded. Dams may be excluded if they are:

- Less than six (6) feet in height;
- Have a capacity less than 50 acre-feet* and are less than 25 feet in height**;
- Have a capacity of less than 15 acre-feet and are more than 25 feet in height;
- Are used for primarily agricultural purposes and have a capacity*** of less than 100 acre-feet;
- Are owned and operated by the Federal Government; or
- Are operated for mining purposes as defined by the Code of Virginia.

* 1 acre-foot equals 43,560 cubic feet.
** The height of a dam is defined as the vertical distance from the stream bed at the downstream toe to the top of the dam.
*** The capacity of a dam is defined as the volume capable of being impounded at the top of the dam.

The Virginia Dam Safety Act requires the owners of state regulated dams, depending on their hazard classification, to apply to the Virginia Soil and Water Conservation Board for an operation and maintenance certificate. The application must include an assessment by a licensed professional engineer as to the dam's condition and must include an operations and maintenance plan along with an emergency operations plan. Certificates are typically issued for a period of six years. Periodic inspections by a licensed professional engineer are required at intervals between every two (highest hazard) and every six years, depending on a dam's hazard classification. All regulated dam owners,

including the County, must inspect their regulated dams at least annually during the years when an engineer's inspection is not required.

GASB 34

In addition to the water-resources related mandates with which the County must comply, other accounting mandates have an impact on stormwater management in Fairfax County as well. The Governmental Accounting Standards Board (GASB) issued Statement 34 in June 1999. The intent of GASB Statement 34 is to more accurately reflect the financial activities of state and local governments in their financial reports. Items that must be reported through the GASB process include all capital assets, including infrastructure. The report must demonstrate the depreciation expense – or cost of "using up" capital assets. GASB notes specifically "infrastructure assets are not required to be depreciated if (1) the government manages those assets using an asset management system that has certain characteristics and (2) the government can document that the assets are being preserved approximately at (or above) a condition level established and disclosed by the government. Qualifying governments will make disclosures about infrastructure assets in required supplementary information, including the physical condition of the assets and the amounts spent to maintain and preserve them over time" (Overview, GASB Statement Number 34). If the County is unable to demonstrate investment over time in its stormwater system infrastructure, the continued depreciation of the system, with no significant system replacement strategy in place, could impact the County's AAA bond rating.